

## CLAIMS

What is claimed is:

- 1    1.    A computer-implemented method for buffering data in a multithreaded  
2        environment, comprising:  
3        generating log data in response to a request for accessing a resource;  
4        identifying a buffer management structure that is associated with a plurality of  
5                data buffers;  
6        reading a last buffer index value that is associated with the buffer management  
7                structure, wherein said last buffer index value provides information that  
8                identifies a last data buffer that was last used for buffering data; and  
9        selecting a data buffer that is associated with said buffer management structure  
10                based on said last buffer index value.
- 1    2.    The method of Claim 1, further comprising:  
2        maintaining a data structure that is associated with said plurality of data buffers,  
3                wherein the data structure is associated with a group of flags that provide  
4                an indication as to whether an entry in said data structure is likely to be  
5                associated with a data buffer that is available for storing said log data; and  
6        prior to writing said log data, reading a flag associated with a particular data  
7                structure entry to determine whether said particular data structure entry is  
8                likely associated with a data buffer that is available for storing said log  
9                data.
- 1    3.    The method of Claim 1, further comprising:  
2        receiving a connection request from a client;  
3        assigning a thread of execution to process said connection request; and  
4        wherein the step of identifying a buffer management structure further comprises  
5                the step of said thread of execution selecting said buffer management  
6                structure from a plurality of buffer management structures, wherein said

7 plurality of buffer management structures are each associated with a set of  
8 data buffers that are used for buffering data to a physical memory unit.

1 4. The method of Claim 1, wherein:  
2 said resource represents one or more sets of content that are associated with a  
3 network server; and  
4 the step of identifying a buffer management structure comprises the step of  
5 selecting said buffer management structure based on one or more  
6 addresses in which said one or more sets of content are stored on said  
7 network server.

1 5. The method of Claim 1, wherein:  
2 prior to receiving said request for accessing said resource, said last buffer index  
3 value identifying a prior data buffer that is associated with said buffer  
4 management structure; and wherein,  
5 the step of reading a last buffer index value further comprises the steps of,  
6 updating said last buffer index value associated with said buffer  
7 management structure; and  
8 after updating said last buffer index value, selecting said data buffer based  
9 on said last buffer index value.

1 6. The method of Claim 5, wherein the step of updating said last buffer index value  
2 includes the step of incrementing said last buffer index value, wherein the step of  
3 incrementing said last buffer index value causes said last buffer index value to  
4 reference said data buffer.

1 7. The method of Claim 1, further comprising the step of writing said log data into  
2 said data buffer.

1 8. The method of Claim 1, further comprising:  
2 reading a flag value that is associated with said data buffer, wherein said flag  
3 value provides an indicator as to whether said data buffer is likely  
4 available for storing said log data; and  
5 attempting to write said log data to said data buffer if said flag value indicates  
6 that said data buffer is likely available for storing said log data.

1 9. The method of Claim 8, wherein the step of attempting to write said log data to  
2 said data buffer comprises:  
3 requesting a mutually exclusive lock on said data buffer; and  
4 storing said log data in said data buffer only after acquiring said mutually  
5 exclusive lock on said data buffer.

1 10. The method of Claim 1, further comprising:  
2 maintaining said plurality of data buffers as an array of available buffers; and  
3 in response to detecting that a particular data buffer contains a particular limited  
4 amount of free data space, removing said particular data buffer from said  
5 array of available buffers.

1 11. The method of Claim 10, wherein the step of removing said particular data buffer  
2 from said array of available buffers further comprises linking said particular data  
3 buffer into a list of ready-to-write data buffers.

1 12. The method of Claim 11, further comprising:  
2 removing said particular data buffer from said array of available buffers; and  
3 storing on a non-volatile storage unit information contained in said particular data  
4 buffer.

1 13. The method of Claim 1, further comprising:  
2 maintaining said plurality of data buffers as an array of available buffers; and  
3 wherein the step of selecting a data buffer that is associated with said buffer  
4 management structure comprises the step of:  
5 in response to determining that no data buffer is available in said array of  
6 available buffers for storing said log data, requesting a free data  
7 buffer from a global list of free data buffers.

1 14. A computer-implemented method for buffering data in a multithreaded  
2 environment, comprising:  
3 generating log data in response to a request for accessing a resource;  
4 identifying a data management structure that is associated with a plurality of data  
5 buffers;  
6 reading a reference value that is associated with the data management structure,  
7 wherein said reference value provides information that identifies a  
8 particular data buffer that is likely available for buffering data; and  
9 selecting said particular data buffer that is associated with said data management  
10 structure based on said reference value.

1 15. The method of Claim 14, further comprising:  
2 maintaining a buffer structure that is associated with said plurality of data buffers,  
3 wherein said buffer structure is associated with a group of flags that  
4 provide an indication as to whether an entry in said buffer structure is  
5 likely to be associated with a data buffer that is available for storing said  
6 log data; and  
7 prior to writing said log data, reading a flag associated with a particular entry to  
8 determine whether said particular entry is likely associated with a data  
9 buffer that is available for storing said log data.

1 16. The method of Claim 14, further comprising:  
2 reading a flag value that is associated with said data buffer, wherein said flag  
3 value provides an indicator as to whether said data buffer is likely  
4 available for storing said log data; and  
5 attempting to write said log data to said data buffer if said flag value indicates  
6 that said data buffer is likely available for storing said log data.

1 17. A computer-readable medium carrying one or more sequences of instructions for  
2 buffering data in a multithreaded environment, wherein execution of the one or  
3 more sequences of instructions by one or more processors causes the one or more  
4 processors to perform the steps of:  
5 generating log data in response to a request for accessing a resource;  
6 identifying a buffer management structure that is associated with a plurality of  
7 data buffers;  
8 reading a last buffer index value that is associated with the buffer management  
9 structure, wherein said last buffer index value provides information that  
10 identifies a last data buffer that was last used for buffering data; and  
11 selecting a data buffer that is associated with said buffer management structure  
12 based on said last buffer index value.

1 18. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the steps of:  
3 maintaining a data structure that is associated with said plurality of data buffers,  
4 wherein the data structure is associated with a group of flags that provide  
5 an indication as to whether an entry in said data structure is likely to be  
6 associated with a data buffer that is available for storing said log data; and  
7 prior to writing said log data, reading a flag associated with a particular data  
8 structure entry to determine whether said particular data structure entry is  
9 likely associated with a data buffer that is available for storing said log  
10 data.

1 19. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the steps of:  
3 receiving a connection request from a client;  
4 assigning a thread of execution to process said connection request; and  
5 wherein the step of identifying a buffer management structure further comprises  
6 the step of said thread of execution selecting said buffer management  
7 structure from a plurality of buffer management structures, wherein said  
8 plurality of buffer management structures are each associated with a set of  
9 data buffers that are used for buffering data to a physical memory unit.

1 20. The computer-readable medium of Claim 17, wherein:  
2 said resource represents one or more sets of content that are associated with a  
3 network server; and  
4 the step of identifying a buffer management structure comprises the step of  
5 selecting said buffer management structure based on one or more  
6 addresses in which said one or more sets of content are stored on said  
7 network server.

1 21. The computer-readable medium of Claim 17, wherein:  
2 prior to receiving said request for accessing said resource, said last buffer index  
3 value identifying a prior data buffer that is associated with said buffer  
4 management structure; and wherein,  
5 the step of reading a last buffer index value further comprises the steps of,  
6 updating said last buffer index value associated with said buffer  
7 management structure; and  
8 after updating said last buffer index value, selecting said data buffer based  
9 on said last buffer index value.

1 22. The computer-readable medium of Claim 21, wherein the step of updating said  
2 last buffer index value includes the step of incrementing said last buffer index

3 value, wherein the step of incrementing said last buffer index value causes said  
4 last buffer index value to reference said data buffer.

1 23. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the step of writing said log data into said data buffer.

1 24. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the steps of:  
3 reading a flag value that is associated with said data buffer, wherein said flag  
4 value provides an indicator as to whether said data buffer is likely  
5 available for storing said log data; and  
6 attempting to write said log data to said data buffer if said flag value indicates  
7 that said data buffer is likely available for storing said log data.

1 25. The computer-readable medium of Claim 24, wherein the step of attempting to  
2 write said log data to said data buffer comprises:  
3 requesting a mutually exclusive lock on said data buffer; and  
4 storing said log data in said data buffer only after acquiring said mutually  
5 exclusive lock on said data buffer.

1 26. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the steps of:  
3 maintaining said plurality of data buffers as an array of available buffers; and  
4 in response to detecting that a particular data buffer contains a particular limited  
5 amount of free data space, removing said particular data buffer from said  
6 array of available buffers.

1 27. The computer-readable medium of Claim 26, wherein the step of removing said  
2 particular data buffer from said array of available buffers further comprises  
3 linking said particular data buffer into a list of ready-to-write data buffers.

1 28. The computer-readable medium of Claim 27, further comprising instructions for  
2 performing the steps of:  
3 removing said particular data buffer from said array of available buffers; and  
4 storing on a non-volatile storage unit information contained in said particular data  
5 buffer.

1 29. The computer-readable medium of Claim 17, further comprising instructions for  
2 performing the steps of:  
3 maintaining said plurality of data buffers as an array of available buffers; and  
4 wherein the step of selecting a data buffer that is associated with said buffer  
5 management structure comprises the step of:  
6 in response to determining that no data buffer is available in said array of  
7 available buffers for storing said log data, requesting a free data  
8 buffer from a global list of free data buffers.

1 30. A computer-readable medium carrying one or more sequences of instructions for  
2 buffering data in a multithreaded environment, wherein execution of the one or  
3 more sequences of instructions by one or more processors causes the one or more  
4 processors to perform the steps of:  
5 generating log data in response to a request for accessing a resource;  
6 identifying a data management structure that is associated with a plurality of data  
7 buffers;  
8 reading a reference value that is associated with the data management structure,  
9 wherein said reference value provides information that identifies a  
10 particular data buffer that is likely available for buffering data; and  
11 selecting said particular data buffer that is associated with said data management  
12 structure based on said reference value.



1 31. The computer-readable medium of Claim 30, further comprising instructions for  
2 performing the steps of:  
3 maintaining a buffer structure that is associated with said plurality of data buffers,  
4 wherein said buffer structure is associated with a group of flags that  
5 provide an indication as to whether an entry in said buffer structure is  
6 likely to be associated with a data buffer that is available for storing said  
7 log data; and  
8 prior to writing said log data, reading a flag associated with a particular entry to  
9 determine whether said particular entry is likely associated with a data  
10 buffer that is available for storing said log data.

1 32. The computer-readable medium of Claim 30, further comprising instructions for  
2 performing the steps of:  
3 reading a flag value that is associated with said data buffer, wherein said flag  
4 value provides an indicator as to whether said data buffer is likely  
5 available for storing said log data; and  
6 attempting to write said log data to said data buffer if said flag value indicates  
7 that said data buffer is likely available for storing said log data.

1 33. A computer system, comprising:  
2 means for generating log data in response to a request for accessing a resource;  
3 means for identifying a data management structure that is associated with a  
4 plurality of data buffers;  
5 means for reading a reference value that is associated with the data management  
6 structure, wherein said reference value provides information that identifies  
7 a particular data buffer that is likely available for buffering data; and  
8 means for selecting said particular data buffer that is associated with said data  
9 management structure based on said reference value.

1 34. The computer system of Claim 33, further comprising:  
2 means for maintaining a buffer structure that is associated with said plurality of  
3 data buffers, wherein said buffer structure is associated with a group of  
4 flags that provide an indication as to whether an entry in said buffer  
5 structure is likely to be associated with a data buffer that is available for  
6 storing said log data; and  
7 means for prior to writing said log data, reading a flag associated with a particular  
8 entry to determine whether said particular entry is likely associated with a  
9 data buffer that is available for storing said log data.

1 35. The computer system of Claim 33, further comprising:  
2 means for reading a flag value that is associated with said data buffer, wherein  
3 said flag value provides an indicator as to whether said data buffer is  
4 likely available for storing said log data; and  
5 means for attempting to write said log data to said data buffer if said flag value  
6 indicates that said data buffer is likely available for storing said log data.